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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,837	01/07/2002	Andrew C. Gilbert	CF-51	2702

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EXAMINER

HARBECK, TIMOTHY M

ART UNIT	PAPER NUMBER
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3692

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/040,837	Applicant(s) GILBERT ET AL.	
	Examiner Timothy M. Harbeck	Art Unit 3692	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13-24 and 26 are rejected as being directed toward a single means claim.

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. *In re Hyatt*, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to *Hyatt* is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

Independent Claim 13 of the present invention is directed to an "apparatus comprising a computing device operable to perform the method of claim 1." The single means claims does not enable a person of ordinary skill in the art to determine the breadth of the claims.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13-24 and 26 are rejected under 35 U.S.C. 101 because they are drawn to more than one statutory class of invention, i.e., a method and an apparatus, in the same claim and is therefore not within one of the statutory classes set forth by 35 U.S.C. § 101.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupien et al (hereinafter Lupien US 5,689,652) in view of Keith (US 2004/0236614 A1).

Re Claim 1: Lupien discloses a method comprising

- Receiving, in a crossing market, a plurality of bid-offer liquidity spreads from a plurality of market makers (Column 3, lines 44-53)
- Receiving, in a crossing market a plurality of customer orders, each order comprising a price (Column 3 line 54-Column 4 line 5)

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- Iteratively selecting one or more bid-offer liquidity spread from the plurality of bid-offer liquidity spreads (Column 4, lines 10-26)

Lupien does not explicitly disclose the steps comprising:

- Determining based on the plurality of customer orders, all outstanding order imbalances for which the respective price is within at least one of the plurality of b-d-offer liquidity spreads
- Calculating based on each selected bid-offer liquidity spread, a crossing price; and
- Filling all determined outstanding order imbalances at one or more of the crossing prices using liquidity provided by one or more market makers.

Keith discloses

- Determining based on the plurality of customer orders, all outstanding order imbalances for which the respective price is within at least one of the plurality of bid-offer liquidity spreads (Paragraph 0065)
- Calculating based on each selected bid-offer liquidity spread, a crossing price; (paragraph 0065)and
- Filling all determined outstanding order imbalances at one or more of the crossing prices using liquidity provided by one or more market makers (paragraph 0066 'guaranteed liquidity').

It would have been obvious to a person of ordinary skill in the art at the time of invention to include the teachings of Keith to the disclosure of Lupien in order to account for any disparities between the buy and sell side orders. In weighting the crossing price,

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the system can maximize participation in the market, which increases both the liquidity and depth of the market and guarantee liquidity for participants.

Re Claim 2: Lupien in view of Keith discloses the claimed method supra, but does not explicitly disclose providing a method for trading a fixed income security. However, Lupien does broadly disclose the trading of "variety of stocks," (Column 1, lines 37-60). Official Notice is taken that the trading of fixed income securities on a crossing market is notoriously old and well known in the art. It would have been obvious to a person of ordinary skill at the time of invention to include the trading of these instruments to the disclosure of Lupien in view of Keith to create a market for this popular type of security.

Re Claim 3: Lupien in view of Keith discloses the claimed method supra and Lupien further discloses the step in which the crossing market rules comprise rules for requiring participation in a series of crossing markets (Column 4, lines 1-26; "The CMC will then calculate for every buy/sell profile pair, a mutual satisfaction cross product. The mutual satisfaction cross product represents the degree to which that buy/sell pair can satisfy each other.)

Re Claim 4: Lupien in view of Keith discloses the claimed method supra and Lupien further discloses the step in which the crossing market rules comprise rules for requiring adherence to the crossing market rules. This step is inherent in the issuance of rules. If adherence is not required then these are not in fact rules.

Re Claim 5: Lupien in view of Keith discloses the claimed method supra and Keith further discloses the step in which iteratively selecting one or more bid-offer liquidity

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spreads comprises selecting at least one of the bid offer liquidity spreads based on a respective determined outstanding order imbalance (paragraphs 0064-0065; "The imbalance is used to determine a point on the curve, and thus to specify the price change.")

Re Claim 6: Lupien in view of Keith discloses the claimed method supra and Keith further discloses the step in which iteratively selecting one or more bid-offer liquidity spreads comprises selecting at least one of the bid offer liquidity spreads based on a proximity of a midpoint of the at least one selected bid-offer liquidity spread to the price of a respective order imbalance (paragraphs 0064-0065; "The price change being measured relative to a specified price, such as the midpoint of the buy-sell quote spread from an external market.")

Re Claim 7: Lupien in view of Keith discloses the claimed method supra and Keith further discloses the step in which calculating the crossing prices comprises calculating, for at least one of the crossing prices, a volume-based weighted average between a midpoint of a respective selected bid-offer liquidity spread and a last-executed trade (paragraph 0065; "the auction match will occur at the midpoint of the most recent quote spread less 2 points.")

Re Claim 8: Lupien in view of Keith discloses the claimed method supra and Keith further discloses the step in which calculating the crossing prices comprises calculating, for at least one of the crossing prices, a volume-based weighted average between a midpoint of a respective selected bid-offer liquidity spread and the price of a respective determined outstanding order imbalance (paragraph 0065-0066).

Re Claims 13-20: Further apparatus claims would have been obvious in order to perform the previously rejected method claims and are therefore rejected using the same art and rationale.

Re Claim 25: Lupien in view of Keith discloses the claimed method supra and further comprising causing crossing market rules that govern trading in the crossing market to be provided (Abstract, Column 3, lines 44-53; crossing based on profiles govern the market)

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupien in view of Keith as applied to claim 1 above, and further in view of Gary (US 6,618,707 B1).

Re Claims 9-10: Lupien in view of Keith discloses the claimed method supra but does not explicitly disclose the step further comprising incentivizing the plurality of market makers to provide liquidity by providing a market maker that controls a majority or a predetermined minority of trading in the crossing market with additional information as to the size of the crossing and the amount of imbalance of buyers and sellers. Gary discloses where a primary market maker receives incentives as a bonus for maintaining an orderly market (Column 4 line 65-Column 5 line 3). It would have been obvious to a person of ordinary skill in the art at the time of invention to include the teaching of Gary to the disclosure of Lupien in view of Keith in order to maintain a certain degree of liquidity and order in the particular market. In doing so, users of the market can be assured that they are receiving a fair trading price. While Gray does not explicitly disclose the incentives as information relating to the size of the crossing and the amount

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of imbalance, Official Notice is taken that this type of information is old and well known as valuable to market makers as it allows for more transparency of the market, which allows said market maker to put themselves in a better position relative to their competitors. It would have been obvious to a person of ordinary skill in the art to include this information as the incentive so that the market maker can profit put themselves in a position to facilitate the most amount of trading, which leads to a greater profit.

Re Claims 11-12: Lupien in view of Keith discloses the claimed method supra but does not explicitly disclose the step further comprising incentivizing the plurality of market makers to provide liquidity by rewarding to the market maker that controls a majority or a predetermined minority of trading in the crossing market with the names of participating market makers and a reduced securities buy price and an increased securities sale price. Gary discloses where a primary market maker receives incentives as a bonus for maintaining an orderly market (Column 4 line 65-Column 5 line 3). It would have been obvious to a person of ordinary skill in the art at the time of invention to include the teaching of Gary to the disclosure of Lupien in view of Keith in order to maintain a certain degree of liquidity and order in the particular market. In doing so, users of the market can be assured that they are receiving a fair trading price. While Gray does not explicitly disclose the incentives as information relating to the size of the crossing and the amount of imbalance, Official Notice is taken that this type of information is old and well known as valuable to market makers as it allows for more transparency of the market, which allows said market maker to put themselves in a

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better position relative to their competitors. It would have been obvious to a person of ordinary skill in the art to include this information as the incentive so that the market maker can profit put themselves in a position to facilitate the most amount of trading, which leads to a greater profit.

Re Claims 21-24 and 26: Further system claims would have been obvious in order to implement the previously rejected method claims 9-12 and 25 respectively; and are therefore rejected using the same art and rationale.

Response to Arguments

Applicant's arguments filed 1/25/2007 have been fully considered but they are not persuasive.

Applicant initially presents arguments with respect to the previous rejections under 35 USC 112, second paragraph. The applicant contends that the previously presented claims recite means plus function language and that corresponding structures (one or more processors) are disclosed in the specification (Remarks page 8). However, it is noted that the features upon which applicant relies (i.e., processors) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The previous point is moot however as the applicant has amended claims 13-24 to recite and "apparatus comprising a computing device operable to perform the method of claim 1." The language of this claim is improper for a variety of reasons. First, this constitutes a single means claim, and is therefore subject to an undue breadth rejection

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as previously noted. Essentially a single means claims is improper because it attempts to cover all possible apparatus for performing a method, even though some may not be known to the inventor (since they are not disclosed in the specification) or could not be known by the inventor (future apparatus, yet to be invented, that would be retroactively infringe on the language of the claim). Second, the claims recite two different statutory classes of invention (a method and an apparatus). Third, claims 15-16 refer to the 'apparatus of claim 25,' when claim 25 is in fact directed toward a method.

With respect to the prior art references, the applicant argues that Lupien does not teach or suggest filling all outstanding orders nor that the entered orders are from 'market makers.' With respect to the first part, the examiner has cited the Keith reference (discussed below) in regards to this limitation. With regards to the 'market maker' argument, Lupien discloses that 'traders' input the orders. However, a reading directly from applicants specification reveals "The smaller the spread of the two-sided market that the trader or dealer (also referred to as the "market maker") is willing to make, the more securities he trades at the crossing." (Page 4 lines 25-28). Thus the applicant explicitly equates the two terms.

With respect to the Keith reference the applicant argues that Keith does not teach or suggest the amended limitation of 'filling all determined outstanding order imbalances' as in claim 1. However, as recited in the action the examiner feels that Keith does suggest this limitation, in reference to the disclosure of the 'liquidity curve,' in that the institution can be 'guaranteed liquidity.' A guarantee of liquidity seems to indicate that no order is left unmatched in the process.

Applicant next argues that the examiner has presented no evidence of record to support his statement of obviousness. However, A suggestion, teaching, or motivation to combine the relevant prior art teachings does not have to be found explicitly in the prior art, as the teaching, motivation, or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. . . . The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. In re Kotzab, 217 F.3d 1365, 1370 (Fed. Cir. 2000). Also, "In many, if not most, situations, there is neither a motivation to make the modification clearly articulated in the reference nor an evident lack of motivation. Rather, the prior art references typically disclose elements or aspects of the claimed subject matter, but fail to specifically point the way toward the combination, substitution or other modification needed to arrive at the invention. A judgment must be made whether 'a person of ordinary skill in the art would have had sufficient motivation to combine the individual [elements] forming the claimed [invention].'" *In re Clinton*, 527 F.2d 1226, 1228, 188 USPQ 365, 367 (CCPA 1976).

Therefore the examiner maintains his argument that 'it would have been obvious to a person of ordinary skill in the art at the time of invention to include the teachings of Keith to the disclosure of Lupien in order to account for any disparities between the buy and sell side orders. In weighting the crossing price, the system can maximize participation in the market, which increases both the liquidity and depth of the market and guarantee liquidity for participants.'

With respect to the examiners position of Official Notice, the MPEP reads 'To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b). See also *Chevenard*, 139 F.2d at 713, 60 USPQ at 241. A general allegation that the claims define a patentable invention without any reference to the examiner's assertion of official notice would be inadequate. It appears that the applicant is making a general allegation as to the patentability of the present invention by only submitting 'that the limitations recited by claims 9-12 and 21-24 and the Examiner's asserted suggestion/motivation regarding these claims are not common knowledge or well known in the art. Again, to traverse the applicant must specifically point out the perceived flaws in examiners logic. As of now the applicant has failed to do so and therefore these rejections are maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

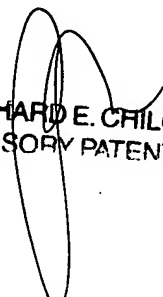
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M. Harbeck whose telephone number is 571-272-8123. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on 571-272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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SUPERVISORY PATENT EXAMINER